RBTCP

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International Specialists in the Environment

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MEMORANDUM

DATE: March 13, 1995

TO: Jeryl Kolb, Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, TAT-Chemist, E & E, Seattle, WA MW

THRU: Michael Boykin, TAT-Chemist, E & E, Seattle, WA MB

SUBJ: **Organic Data Quality Assurance Review, Ridgefield Site, Ridgefield, Washington**

REF: Project TDD: T10-9410-028 Analytical TDD: T10-9412-004
Project PAN: EWA-0797-SB Analytical PAN: EWA-0797-AA

The data quality assurance review of 2 water samples collected from the Ridgefield site located in Ridgefield, Washington, has been completed. Analysis for Semivolatile Organic Compounds (EPA Method 8270) was performed by Sound Analytical Services, Tacoma, Washington.

The samples were numbered: T4120213 T4120223

Data Qualifications:

I **Holding Time: Acceptable.**

The samples were collected 12-15-94, extracted 12-20-94, and were analyzed by 12-22-94, therefore meeting QC criteria of less than 7 days between collection and extraction and less than 40 days between extraction and semivolatile analysis.

II **GC/MS Tuning: Acceptable.**

All tuning check compound mass abundances and ratios were within QC limits for semivolatile analysis.

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III Calibration

A. Initial Calibration: Satisfactory.

All System Performance Check Compounds (SPCCs) were within contract-required limits for the initial calibration with average Relative Response Factors (RRFs) above 0.05 for semivolatiles, except:

Date	Analyte	RRF
12-21-94	4,6-Dinitro-2-methylphenol	0.036

4,6-Dinitro-2-methylphenol sample quantitation limits were rejected (R).

All applicable Calibration Check Compounds (CCCs) and non-CCCs were within contract-required limits for the initial calibration with Percent Relative Standard Deviations (RSDs) below 30 percent, except:

Date	Analyte	RSD
12-21-94	Benzoic Acid	42.1 %
	2,4-Dinitrophenol	54.4 %
	4,6-Dinitro-2-methylphenol	47.5 %
	Benzidine	34.6 %

Positive results for the initial calibration QC outliers were flagged as estimated quantities (J) in the associated samples.

B. Continuing Calibration: Satisfactory.

All System Performance Check Compounds (SPCCs) were within contract-required limits for the continuing calibration with average Relative Response Factors (RRFs) above 0.05 for semivolatiles, except:

Date	Analyte	RRF
12-21-94	4,6-Dinitro-2-methylphenol	0.038

Positive results for the continuing calibration QC outliers were flagged as estimated quantities (J) in the associated samples.

All Calibration Check Compounds (CCCs) and non-CCCs were within contract-required limits for the continuing calibration with Percent Differences (%D) below 25 percent, except:

Date	Analyte	RSD
12-22-94	bis(2-Chloroethoxy)methane	33.0 %
	2,4-Dinitrophenol	27.5 %
	4,6-Dinitro-2-methylphenol	25.1 %
	4-Nitrophenol	28.6 %

Results for the continuing calibration QC outliers were flagged as estimated quantities (J or UJ) in the associated samples.

IV Internal Standards: Acceptable.

All Internal Standard results were within QC limits.

V Error Determination: Not Performed.

A. Determination of Bias: Not Performed.

Samples necessary for bias determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined).

B. Determination of Precision: Not Performed.

Samples necessary for precision determination were not provided to the laboratory. All samples were flagged PND (Precision Not Determined).

VI Method Blank: Satisfactory.

No Target Compound List contaminants were detected in any method blank, except:

Blank	Analyte	Concentration
Method Blank	Di-n-butylphthalate	3.6 ug/L
	bis(2-ethylhexyl)phthalate	0.9 ug/L

Sample results less than 10 times the phthalate blank results were flagged as not detected (U).

VII Compound Identification: Acceptable.

Compound identification was acceptable.

VIII Compound Quantitation and Reported Detection Limits: Acceptable.

Compound quantitation and reported detection limits were acceptable.

IX Performance Evaluation Samples: Not Performed.

Performance evaluation samples were not provided to the laboratory.

X Surrogate Recovery: Acceptable.

Recoveries for all surrogate compounds were within QC limits.

XI Overall Assessment of Data for Use

Results greater than the instrument detection but less than the practical quantitation limit were flagged as estimated quantities (J).

The overall usefulness of the data is based on the criteria outlined in the OSWER Directive "Quality Assurance/Quality Control Guidance for Removal Activities, Data Validation Procedures" (EPA /540/G-90/004). Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

J - The associated numerical value is an estimated quantity because the reported concentrations were less than the contract required detection limits or quality control criteria were not met.

U - The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.

R - Quality control indicates that the data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.

SOUND ANALYTICAL SERVICES, INC.

Client Name	Ecology & Environment
Client ID:	T4120213
Lab ID:	45233-01
Date Received:	12/19/94
Date Prepared:	12/20/94
Date Analyzed:	12/22/95
% Solids	-

Semivolatile Organics by USEPA Method 8270

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Nitrobenzene - d5	63		35	114
2 - Fluorobiphenyl	67		43	116
p - Terphenyl - d14	79		33	141
Phenol - d5	30		10	94
2 - Fluorophenol	55		21	100
2,4,6 - Tribromophenol	74		10	123

Analyte	Result (ug/L)	PQL	Flags
Phenol	ND	0.31	U
bis(2-Chloroethyl)ether	ND	0.42	
2-Chlorophenol	ND	0.45	
1,3-Dichlorobenzene	ND	0.6	
1,4-Dichlorobenzene	ND	0.58	
Benzyl Alcohol	ND	1.6	
1,2-Dichlorobenzene	ND	0.62	
2-Methylphenol	ND	0.59	
bis(2-Chloroisopropyl)ether	ND	1	
4-Methylphenol	ND	1.6	
N-nitroso-di-n-propylamine	ND	1.1	
Hexachloroethane	ND	1.1	
Nitrobenzene	ND	1.7	
Isophorone	ND	1.3	
2-Nitrophenol	ND	0.59	
2,4-Dimethylphenol	ND	0.45	
Benzoic Acid	ND	0.71	
bis(2-Chloroethoxy)methane	ND	0.6	J
2,4-Dichlorophenol	ND	0.43	
1,2,4-Trichlorobenzene	ND	0.56	
Naphthalene	ND	0.43	
4-Chloroaniline	ND	0.51	
Hexachlorobutadiene	ND	0.45	
4-Chloro-3-methylphenol	ND	0.42	
2-Methylnaphthalene	ND	0.45	
Hexachlorocyclopentadiene	ND	0.74	

RND PND

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Semivolatile Organics by USEPA Method 8270 data for 45233-01 continued...

Analyte	Result (ug/L)		PQL	Flags
2,4,6-Trichlorophenol	ND		0.46 U	RND
2,4,5-Trichlorophenol	ND		0.49	
2-Chloronaphthalene	ND		0.7	
2-Nitroaniline	ND		0.69	
Dimethylphthalate	ND		0.65	
Acenaphthylene	ND		0.43	
2,6-Dinitrotoluene		0.33	0.41	J
3-Nitroaniline	ND		0.36 U	
Acenaphthene	ND		0.6	
2,4-Dinitrophenol	ND		0.44	
4-Nitrophenol	ND		0.15 J	
Dibenzofuran	ND		0.57	
2,4-Dinitrotoluene	ND		0.74	
Diethylphthalate	ND		0.59	
4-Chlorophenyl phenyl ether	ND		0.52	
Fluorene	ND		0.86	
4-Nitroaniline	ND		0.53	
4,6-Dinitro-2-methylphenol	ND		0.35 R	
N-Nitrosodiphenylamine	ND		0.64	
4-Bromophenyl phenyl ether	ND		0.35	
Hexachlorobenzene	ND		0.42	
Pentachlorophenol	ND		0.57	
Phenanthrene	ND		0.66	
Anthracene	ND		0.56	
Di-n-butylphthalate		3.5 U	1.3	B1
Fluoranthene	ND		0.41 U	
Pyrene	ND		0.48	
Butylbenzylphthalate	ND		0.48	
3,3'-Dichlorobenzidine	ND		0.65	
Benzo(a)anthracene	ND		0.46	
Chrysene	ND		0.48	
bis(2-Ethylhexyl)phthalate		1.6 U	1.7	J B1
Di-n-octylphthalate	ND		0.48 U	
Benzo(b)fluoranthene	ND		0.47	
Benzo(k)fluoranthene	ND		0.4	
Benzo(a)pyrene	ND		0.17	
Indeno(1,2,3-cd)pyrene	ND		0.16	
Dibenz(a,h)anthracene	ND		0.16	
Benzo(g,h,i)perylene	ND		0.22	

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SOUND ANALYTICAL SERVICES, INC.

Client Name	Ecology & Environment
Client ID:	T4120223
Lab ID:	45233-02
Date Received:	12/19/94
Date Prepared:	12/20/94
Date Analyzed:	12/22/95
% Solids	-

Semivolatile Organics by USEPA Method 8270

Surrogate	% Recovery	Flags	Recovery Limits Low	High
Nitrobenzene - d5	61		35	114
2 - Fluorobiphenyl	71		43	116
p - Terphenyl - d14	78		33	141
Phenol - d5	31		10	94
2 - Fluorophenol	56		21	100
2,4,6 - Tribromophenol	75		10	123

Analyte	Result (ug/L)	PQL	Flags
Phenol	ND	0.31	U RND PND
bis(2-Chloroethyl)ether	ND	0.42	
2-Chlorophenol	ND	0.45	
1,3-Dichlorobenzene	ND	0.6	
1,4-Dichlorobenzene	ND	0.57	
Benzyl Alcohol	ND	1.6	
1,2-Dichlorobenzene	ND	0.61	
2-Methylphenol	ND	0.58	
bis(2-Chloroisopropyl)ether	ND	1	
4-Methylphenol	ND	1.6	
N-nitroso-di-n-propylamine	ND	1.1	
Hexachloroethane	ND	1.1	
Nitrobenzene	ND	1.7	
Isophorone	ND	1.3	
2-Nitrophenol	ND	0.58	
2,4-Dimethylphenol	ND	0.44	
Benzoic Acid	ND	0.7	
bis(2-Chloroethoxy)methane	ND	0.59	J
2,4-Dichlorophenol	ND	0.42	
1,2,4-Trichlorobenzene	ND	0.56	
Naphthalene	ND	0.43	
4-Chloroaniline	ND	0.51	
Hexachlorobutadiene	ND	0.44	
4-Chloro-3-methylphenol	ND	0.42	
2-Methylnaphthalene	ND	0.45	
Hexachlorocyclopentadiene	ND	0.73	

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SOUND ANALYTICAL SERVICES, INC.

Semivolatile Organics by USEPA Method 8270 data for 45233-02 continued...

Analyte	Result (ug/L)		PQL	Flags
2,4,6-Trichlorophenol	ND		0.46 U	RND PND
2,4,5-Trichlorophenol	ND		0.49	
2-Chloronaphthalene	ND		0.7	
2-Nitroaniline	ND		0.69	
Dimethylphthalate	ND		0.65	
Acenaphthylene	ND		0.42	
2,6-Dinitrotoluene	ND		0.41	
3-Nitroaniline	ND		0.35	
Acenaphthene	ND		0.59	
2,4-Dinitrophenol	ND		0.43	J
4-Nitrophenol	ND		0.15	
Dibenzofuran	ND		0.57	
2,4-Dinitrotoluene	ND		0.73	
Diethylphthalate	ND		0.58	
4-Chlorophenyl phenyl ether	ND		0.52	
Fluorene	ND		0.85	
4-Nitroaniline	ND		0.53	
4,6-Dinitro-2-methylphenol	ND		0.34	R
N-Nitrosodiphenylamine	ND		0.63	
4-Bromophenyl phenyl ether	ND		0.35	
Hexachlorobenzene	ND		0.42	
Pentachlorophenol	ND		0.56	
Phenanthrene	ND		0.66	
Anthracene	ND		0.55	
Di-n-butylphthalate		1.2 U	1.3	J B1
Fluoranthene	ND		0.41 U	
Pyrene	ND		0.47	
Butylbenzylphthalate	ND		0.47	
3,3'-Dichlorobenzidine	ND		0.64	
Benzo(a)anthracene	ND		0.46	
Chrysene	ND		0.48	
bis(2-Ethylhexyl)phthalate		1.2 U	1.7	J B1
Di-n-octylphthalate	ND		0.48 U	
Benzo(b)fluoranthene	ND		0.47	
Benzo(k)fluoranthene	ND		0.4	
Benzo(a)pyrene	ND		0.17	
Indeno(1,2,3-cd)pyrene	ND		0.16	
Dibenz(a,h)anthracene	ND		0.16	
Benzo(g,h,i)perylene	ND		0.22	

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MEMORANDUM

DATE: March 13, 1995

TO: Jeryl Kolb, Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, TAT-Chemist, E & E, Seattle, WA MW

THRU: Michael Boykin, TAT-Chemist, E & E, Seattle, WA MB

SUBJ: **Organic Data Quality Assurance Review, Ridgefield Site, Ridgefield, Washington**

REF: Project TDD: T10-9410-028 Analytical TDD: T10-9412-004
Project PAN: EWA-0797-SB Analytical PAN: EWA-0797-AA

The data quality assurance review of 2 water samples collected from the Ridgefield site in Ridgefield, Washington, has been completed. Analysis for Chlorinated Pesticides/Polychlorinated Biphenyls (EPA Method 8080) was performed by the Sound Analytical Services, Tacoma, Washington.

The samples were numbered: T4120213 T4120223

Data Qualifications:

I Sample Holding Time: Acceptable.

The samples were collected 12-15-94, extracted 12-20-94, and analyzed by 12-21-94, therefore within holding time limits of less than 7 days between collection and extraction and less than 40 days between extraction and analysis.

II Instrument Performance: Acceptable.

The 4,4'-DDT retention time was greater than 12 minutes on all columns. Peak resolution and the analytical sequence were acceptable. All pesticide standards were within the listed retention time windows. 4,4'-DDT and endrin percent breakdown results were within QC limits. The surrogate retention time shift was within QC limits.

III Initial and Continuing Calibration Verification: Acceptable.

A seven-point initial calibration was performed for aldrin, endrin, DBC, and 4,4'-DDT, with all % Relative Standard Deviations (%RSDs) less than the QC limit of 10 % on both columns. A one point initial calibration was performed for each PCB. No analytes were detected, therefore toxaphene and 4,4'-DDT did not require a 3-point calibration. The proper analytical sequence was followed.

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IV Error Determination: Not Performed.

A. Determination of Bias: Not Performed.

Samples necessary for bias determination were not provided to the laboratory. All sample results were flagged RND (Recovery Not Determined).

B. Determination of Precision: Not Performed.

Samples necessary for precision determination were not provided to the laboratory. All sample results were flagged PND (Precision Not Determined).

V Method Blank: Acceptable.

No contaminants were detected in any method blank.

VI Compound Identification: Acceptable.

Compound identification was acceptable.

VII Compound Quantitation and Reported Detection Limits: Acceptable.

Compound quantitation and reported detection limits were acceptable.

VIII Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

IX Surrogate Recoveries: Acceptable.

All surrogate recoveries were within QC limits of 50 % to 150 % recovery.

X Overall Assessment of Data for Use

GPC cleanup and Florisil cleanup checks were not performed. No action was taken based on these discrepancies. The overall usefulness of the data is based on the criteria outlined in the OSWER Directive "National Functional Guidelines For Organic Data Review" (February 1994). Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

J - The associated numerical value is an estimated quantity because the reported concentrations were less than the contract required detection limits or quality control criteria were not met.

U - The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.

SOUND ANALYTICAL SERVICES, INC.

Client Name	Ecology & Environment
Client ID:	T4120213
Lab ID:	45233-01
Date Received:	12/19/94
Date Prepared:	12/20/94
Date Analyzed:	12/21/94
% Solids	-

Organochlorine Pesticides and PCBs by USEPA Method 8080

			Recovery Limits	
Surrogate	**% Recovery**	**Flags**	**Low**	**High**
TCMX	65		50	150
Decachlorobiphenyl	78		50	150

Analyte	**Result (ug/L)**	**PQL**	**Flags**
Aroclor 1016	ND	0.46	
Aroclor 1221	ND	0.46	
Aroclor 1232	ND	0.46	
Aroclor 1242	ND	0.46	
Aroclor 1248	ND	0.46	
Aroclor 1254	ND	0.46	
Aroclor 1260	ND	0.46	
Aldrin	ND	0.0092	
alpha-BHC	ND	0.0092	
beta-BHC	ND	0.0092	
delta-BHC	ND	0.0092	
gamma-BHC (Lindane)	ND	0.0092	
Chlordane (technical)	ND	0.092	
4,4'-DDD	ND	0.018	
4,4'-DDE	ND	0.018	
4,4'-DDT	ND	0.018	
Dieldrin	ND	0.018	
Endosulfan I	ND	0.0092	
Endosulfan II	ND	0.018	
Endosulfan sulfate	ND	0.018	
Endrin	ND	0.018	
Endrin aldehyde	ND	0.018	
Heptachlor	ND	0.0092	
Heptachlor epoxide	ND	0.0092	
Methoxychlor	ND	0.092	
Endrin ketone	ND	0.018	

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SOUND ANALYTICAL SERVICES, INC.

Organochlorine Pesticides and PCBs by USEPA Method 8080 data for 45233-01 continued...

Analyte	Result (ug/L)	PQL	Flags
Toxaphene	ND	0.92 U	

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SOUND ANALYTICAL SERVICES, INC.

Client Name	Ecology & Environment
Client ID:	T4120223
Lab ID:	45233-02
Date Received:	12/19/94
Date Prepared:	12/20/94
Date Analyzed:	12/21/94
% Solids	-

Organochlorine Pesticides and PCBs by USEPA Method 8080

Surrogate	% Recovery	Flags	Recovery Limits Low	High
TCMX	68		50	150
Decachlorobiphenyl	78		50	150

Analyte	Result (ug/L)	PQL	Flags
Aroclor 1016	ND	0.49	U
Aroclor 1221	ND	0.49	
Aroclor 1232	ND	0.49	
Aroclor 1242	ND	0.49	
Aroclor 1248	ND	0.49	
Aroclor 1254	ND	0.49	
Aroclor 1260	ND	0.49	
Aldrin	ND	0.0097	
alpha-BHC	ND	0.0097	
beta-BHC	ND	0.0097	
delta-BHC	ND	0.0097	
gamma-BHC (Lindane)	ND	0.0097	
Chlordane (technical)	ND	0.097	
4,4'-DDD	ND	0.019	
4,4'-DDE	ND	0.019	
4,4'-DDT	ND	0.019	
Dieldrin	ND	0.019	
Endosulfan I	ND	0.0097	
Endosulfan II	ND	0.019	
Endosulfan sulfate	ND	0.019	
Endrin	ND	0.019	
Endrin aldehyde	ND	0.019	
Heptachlor	ND	0.0097	
Heptachlor epoxide	ND	0.0097	
Methoxychlor	ND	0.097	
Endrin ketone	ND	0.019	

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SOUND ANALYTICAL SERVICES, INC.

Organochlorine Pesticides and PCBs by USEPA Method 8080 data for 45233-02 continued...

Analyte	Result (ug/L)	PQL	Flags
Toxaphene	ND	0.97 U	

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